

MR1197-500

Serial Number: 09/988,430

Reply to Office Action dated 16 January 2004

REMARKS/ARGUMENTS

This case has been reviewed and analyzed in view of the Official Action dated 20 May 2004. Responsive to the rejections made by the Examiner in the Official Action, Claim 2 has now been amended to more clearly clarify the inventive concept of the Applicant.

Prior to a discussion of the Examiner's objections and rejections, it is believed that it may be beneficial to briefly review the subject Patent Application system in light of the inventive concept of the Applicant. The subject Patent Application system is directed to a light bulb having a convex lens formed therein. As shown in Figure 1, the bulb includes a glass shell 1 housing a pair of conductive wires 2 with a tungsten filament 3 connecting the conductive wire 2. The glass shell 1 has an upper region 11 forming a convex lens. As shown in Figure 2 of the Drawings, in one only embodiment, the convex lens 11 has an upper surface which is substantially planar and a lower surface which is convex. In the embodiment of Figure 3, the upper surface of the lens 11 is convex and the lower surface is concave, thus providing for an overall convex-shaped lens region formed in the upper surface of the light bulb.

The Examiner has rejected Claim 2 under 35 U.S.C. § 102(b) as being anticipated by the Lang Patent 5,686,786. It is the Examiner's contention that all elements of Claim 2 are taught by the Lang reference.

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The Lang reference is directed towards a light bulb with a glass envelope having light transmission of a wavelength only up to 700 nm. Figures 6-11 illustrate a second preferred embodiment 44 of the light bulb including a dome shaped envelope 46. As described in column 7, lines 31-34, the upper region of the dome, referred to as an "envelope" 46 has a constant thickness of approximately 1 mm. This feature is also shown in the Drawings, particularly Figures 7 and 9, wherein the degree of curvature of the outer surface is shown to be equivalent to the degree of curvature of the inner surface.

In a glass envelope where the thickness of the glass is held constant; i.e., where there is no difference between the degree of curvature between the upper surface and the lower surface, the envelope does not act as a convex condensing lens.

Thus the Lang reference only provides for a "dome" top envelope which is not for use as a lens system but provides a contour which may be incorporated into standard light bulbs. The Lang reference does not incorporate any element which would provide a lens effect as is necessary to the purposes and objectives of the present invention system.

A convex or condensing lens focuses light through the utilization of two opposed outer surfaces having different degrees of curvature. In the case where the outer and inner surfaces have the same degree of curvature, as in Figures 7 and 9 of the Lang reference, for example, or, in other words, where there is a constant

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thickness of the transmissive medium, there is no focusing refraction of the light passing through the glass envelope.

In contradistinction, in the embodiment of Figure 3 of the subject Patent Application, the upper region 11 forms a convex lens for focusing the light generated by the tungsten filament. The upper surface, as shown in Figure 3, has a greater degree of curvature than the lower surface, thus forming an overall convex lens for focusing of light generated by the filament. As opposed to the system shown in the Lang reference, the system of the subject Patent Application, in the embodiment of Figure 3, will focus the light generated by the tungsten filament due to the differing degrees of curvature between the upper and lower surfaces of the lens 11.

Thus, the Lang reference does not provide for: "... an overall convex condensing lens being defined by said upper and lower surfaces for focusing of light generated by said tungsten filament ...", as is clearly provided by newly-amended independent Claim 2.

Thus, based upon newly-amended independent Claim 2, it is not believed that the subject Application is anticipated by, or made obvious by, the Lang reference when independent Claim 2 is carefully reviewed.

The Examiner has additionally rejected Claim 1 under 35 U.S.C. § 103(a) as being unpatentable over the Lang reference in view of the Murata Patent 4,935,665. It is the Examiner's contention that it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to utilize the lens plate having a convex lens as taught by Murata for the top portion or the top of the envelope of Lang in order to efficiently and effectively collect the light emitted from the filament and release the light forward, thus increasing the brightness of the lamp.

The Murata reference is directed towards a light emitting diode lamp. As shown in Figure 1, the lens plate 3 includes a plurality of convex lenses 31 with the individual convex lenses 31 being positioned above corresponding light emitting diodes 2 which are fixedly secured to an insulated metallic board 1.

It is respectfully submitted that there is no motivation for combining the Murata system with the Lang system. The Murata system is directed towards a light source including a multiplicity of light emitting diodes. In contradistinction, the Lang reference is directed towards a single light bulb system having a glass enclosure and a standard light bulb filament. Though both of these devices are utilized for producing light, that is the only principle or element in common between the two references.

The Murata system is directed towards light production and focusing utilizing solid state systems. Solid state electronic devices are in an entirely separate field of art from standard light bulbs and it is not believed that there is any motivation to combine the two separate and distinct fields of art, and such a combination would not be obvious.

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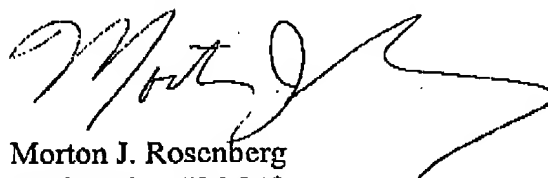
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Thus, it is not believed that the subject Patent Application is made obvious by the Examiner's combination of the Murata reference with the Lang reference, particularly in view of the novel combination of the convex lens and the light bulb shown in Figure 2 of the subject Patent Application Drawings.

The remaining references cited by the Examiner but not used in the rejection have been reviewed, but are believed to be further removed when patentable distinctions are taken into account than those cited by the Examiner in the rejection.

It is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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